

**Work Order ID 150158****\*150158\***

Page 1

Wednesday, August 24, 2016 11:43:32 AM

Item ID: D3884-1

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Saddle, Inside LH

Start Date: 9/6/2016 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 9/12/2016 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals: Process Plan: **DAS** Date: **AUG 24 2016**

Tooling:

Date:

Run Start **\*NR1\***QC: **21**

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D3884

C

100

0.11

**\*100\***

HAAS CNC VERTICAL MACHINING #1

HAAS 1

0.98

HAAS CNC vertical machine #1

Memo

Program Batch No. **150158**Double check by: **JFC**

1-Machine Step No 1 per Folio FA818 and inspect per attached Dimension Sheets

2-Machine Step No 2 per Folio FA818 and inspect per attached Dimension Sheets

3-Machine Step No 3 per Folio FA818 and inspect per Dimension Sheets

**DAS**  
**44**  
**9-89** 16-09-01

110

QC1- Inspection performed by CMM

0.00

**\*110\***

QC

Quality Control

Memo

Inspect on CMM as per folio CMMMA004.

DWG REV:

CMM PROG. REV:

0.01

**DAS**  
**44**  
**9-89** 16-09-01

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                     |  |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | MRB (QSI042) Approval<br><br><br>Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                                     |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |

| Root Cause                                  |                          |                                                |                          | FAULT CATEGORY                                  |                          |                                                            |                          |
|---------------------------------------------|--------------------------|------------------------------------------------|--------------------------|-------------------------------------------------|--------------------------|------------------------------------------------------------|--------------------------|
| Environment <input type="checkbox"/>        | <input type="checkbox"/> | No Re-verification <input type="checkbox"/>    | <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/>        | <input type="checkbox"/> | Temperature/Cure <input type="checkbox"/>                  | <input type="checkbox"/> |
| Design <input type="checkbox"/>             | <input type="checkbox"/> | Operator <input type="checkbox"/>              | <input type="checkbox"/> | Bending <input type="checkbox"/>                | <input type="checkbox"/> | Set-up <input type="checkbox"/>                            | <input type="checkbox"/> |
| Doc/Data <input type="checkbox"/>           | <input type="checkbox"/> | Offset/Setup <input type="checkbox"/>          | <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/>  | <input type="checkbox"/> | BOM/Route <input type="checkbox"/>                         | <input type="checkbox"/> |
| Equip/Tooling <input type="checkbox"/>      | <input type="checkbox"/> | Supplier <input type="checkbox"/>              | <input type="checkbox"/> | Cracks <input type="checkbox"/>                 | <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/>              | <input type="checkbox"/> |
| Handling/Pre <input type="checkbox"/>       | <input type="checkbox"/> | Training <input type="checkbox"/>              | <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | <input type="checkbox"/> |
| Material <input type="checkbox"/>           | <input type="checkbox"/> | Use for Testing <input type="checkbox"/>       | <input type="checkbox"/> | Cuffs <input type="checkbox"/>                  | <input type="checkbox"/> | Contamination <input type="checkbox"/>                     | <input type="checkbox"/> |
| Internal Transport <input type="checkbox"/> | <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | <input type="checkbox"/> | Crushing <input type="checkbox"/>               | <input type="checkbox"/> | Countersink <input type="checkbox"/>                       | <input type="checkbox"/> |
| Tribal Knowledge <input type="checkbox"/>   | <input type="checkbox"/> | Rushing <input type="checkbox"/>               | <input type="checkbox"/> | Heat Treat <input type="checkbox"/>             | <input type="checkbox"/> | Cut Too Short <input type="checkbox"/>                     | <input type="checkbox"/> |
| LOA <input type="checkbox"/>                | <input type="checkbox"/> | Product Improvement <input type="checkbox"/>   | <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/>     | <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/>   | <input type="checkbox"/> |
| Substation <input type="checkbox"/>         | <input type="checkbox"/> | Process Improvement <input type="checkbox"/>   | <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/>          | <input type="checkbox"/> | Drill Holes <input type="checkbox"/>                       | <input type="checkbox"/> |
| Past Expiry Date <input type="checkbox"/>   | <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | <input type="checkbox"/> | OTHER : _____                                   |                          |                                                            |                          |
| Misidentified <input type="checkbox"/>      | <input type="checkbox"/> | Past Due <input type="checkbox"/>              | <input type="checkbox"/> |                                                 |                          |                                                            |                          |

**Work Order ID 150158****\*150158\***

Page 2

Wednesday, August 24, 2016 11:43:32 AM

Item ID: D3884-1

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Saddle, Inside LH

Start Date: 9/6/2016 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 9/12/2016 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***  
Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description          | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|-----------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 120                            | QC8- Inspect parts - second check | 0.00                 |         |        |              |               |               |                  |                   |
| <b>*120*</b>                   |                                   |                      |         |        |              |               |               |                  |                   |
| QC                             | Memo                              | 0.02                 |         |        |              |               |               |                  | DAS<br>08<br>9-89 |
| Quality Control                |                                   |                      |         |        |              |               |               |                  |                   |

130 Chemical Conversion Coat per QSI005 4.1

0.00

**\*130\***

HandFinish

Memo

0.22

Hand Finishing

**x6 LH**  2016/08/06  
BFB



DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                    |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Step #:                                                                                                                                                                            | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | MRB (QSI042) Approval                                                                                              |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                    | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                    |  |
| <b>Root Cause</b><br><div style="display: flex;"> <div style="flex: 1;">           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div style="flex: 1;">           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |                                                                                                                                                                                    | <b>FAULT CATEGORY</b><br><div style="display: flex;"> <div style="flex: 1;">           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div style="flex: 1;">           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div style="flex: 1;">           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Mislabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div style="flex: 1;">           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |  |                                                                                                                    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                    | OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                    |  |

**Work Order ID 150158****\*150158\***

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Wednesday, August 24, 2016 11:43:32 AM

Item ID: D3884-1      Accept      **\*N900040100\***      Setup Start **\*NS1\***  
Revision ID:      Stop **\*NS2\***  
Item Name: Saddle, Inside LH  
Start Date: 9/6/2016      Start Qty: 6.00      **\*6\***      Cust Item ID:  
Required Date: 9/12/2016      Req'd Qty: 6.00      **\*6\***      Customer:  
Reference:

Approvals:      Process Plan:      Date:      Tooling:      Date:      Run Start **\*NR1\***  
QC:      Date:      SPC (Y/N):      Date:      Stop **\*NR2\***

| Sequence ID/<br>Work Center ID                      | Operation<br>Description                                                                                                                                                                                                                                                                                                                      | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp                           |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|------------------------------------------|
| 140<br><b>*140*</b><br>Powdercoat<br>Powder Coating | White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum<br><br><b>Memo</b><br>***MASK INSIDE SURFACES OF SADDLE PRIOR TO APPLICATION OF<br>POWDER COAT AS PER INDICATED ON DWG (SEE NOTE 2)***<br><i>M 135418</i><br>***DO NOT MASK INSIDE FLANGE SURFACE***<br><br>START TIME: <i>8:55</i><br>OVEN TEMPERATURE: <i>320°</i><br>FINISH TIME: <i>4:25</i> | 0.00<br><br>0.05     |         |        |              | <i>6</i>      | <i>1609-7</i> |                  | <i>DAS 34 9-89</i>                       |
| 150<br><b>*150*</b><br>QC<br>Quality Control        | QC3- Inspect Part Finish<br><br><b>Memo</b>                                                                                                                                                                                                                                                                                                   | 0.00<br><br>0.01     |         |        |              | <i>(6)</i>    |               |                  | <i>DAS 38 9-89</i><br><i>SEP 07 2016</i> |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Step #: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QS1042) Approval                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Completed By                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lead hand / Supervisor Approval Verification                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | QC / QA Coordinator Approval                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |
| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |



**Work Order ID 150158****\*150158\***

Page 4

Wednesday, August 24, 2016 11:43:32 AM

Item ID: D3884-1      Accept      **\*N900040100\***      Setup Start **\*NS1\***  
Revision ID:      Stop **\*NS2\***  
Item Name: Saddle, Inside LH  
Start Date: 9/6/2016      Start Qty: 6.00      **\*6\***      Cust Item ID:  
Required Date: 9/12/2016      Req'd Qty: 6.00      **\*6\***      Customer:  
Reference:

Approvals:      Process Plan:      Date:      Tooling:      Date:      Run Start **\*NR1\***  
QC:      Date:      SPC (Y/N):      Date:      Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                           | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty      | Reject<br>Qty     | Reject<br>Number   | Insp.<br>Stamp |
|--------------------------------|----------------------------------------------------|----------------------|---------|--------|--------------|--------------------|-------------------|--------------------|----------------|
| 160                            | Identify as per dwg & Stock Location: <i>St404</i> | 0.00                 |         |        |              |                    |                   |                    |                |
| <b>*160*</b>                   |                                                    |                      |         |        |              |                    |                   |                    |                |
| Packaging                      | Memo                                               | 0.01                 |         |        |              | <i>6</i>           | <i>DAS 6 9-89</i> | <i>SEP 07 2016</i> |                |
| Packaging                      |                                                    |                      |         |        |              |                    |                   |                    |                |
| 170                            | QC21- Final Inspection - Work Order Release        | 0.00                 |         |        |              |                    |                   |                    |                |
| <b>*170*</b>                   |                                                    |                      |         |        |              |                    |                   |                    |                |
| QC                             | Memo                                               | 0.10                 |         |        |              | <i>DAS 21 9-89</i> |                   | <i>SEP 08 2016</i> |                |
| Quality Control                |                                                    |                      |         |        |              |                    |                   |                    |                |
|                                |                                                    |                      |         |        |              | <i>DAS 21 9-89</i> |                   | <i>SEP 08 2016</i> |                |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                     |  |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | MRB (QSI042) Approval<br><br><br>Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                                     |  |  |
| JAD<br>TS                                                    |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |

| Root Cause                                  |                                                |                                                 |                                                            | FAULT CATEGORY                                 |                                               |  |  |
|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|--|--|
| Environment <input type="checkbox"/>        | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |  |  |
| Design <input type="checkbox"/>             | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |  |  |
| Doc/Data <input type="checkbox"/>           | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |  |  |
| Equip/Tooling <input type="checkbox"/>      | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |  |  |
| Handling/Pre <input type="checkbox"/>       | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |  |  |
| Material <input type="checkbox"/>           | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |  |  |
| Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |  |  |
| Tribal Knowledge <input type="checkbox"/>   | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |  |  |
| LOA <input type="checkbox"/>                | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |  |  |
| Substation <input type="checkbox"/>         | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |  |  |
| Past Expiry Date <input type="checkbox"/>   | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                   |                                                            |                                                |                                               |  |  |
| Misidentified <input type="checkbox"/>      | Past Due <input type="checkbox"/>              |                                                 |                                                            |                                                |                                               |  |  |



# Picklist Print

Wednesday, August 24, 2016 11:43:35 AM

Page 1

Work Order ID: 150158

\*150158\*

Parent Item: D3884-1

\*D3884-1\*

Parent Item Name: Saddle, Inside LH

Start Date: 9/6/2016

Required Date: 9/12/2016

Start Qty: 6.00

Required Qty: 6.00

Comments:

IPP RevA: New issue DD verified by:EC

IPP REV:B

15.05.20 remove inside powdercoat DD VERF:JLM

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

D6101-017

Manufactured

No

Each

41.0000

6

\*\*

6

DAS

20

9-89

16-08-31

\*D6101-017\*

Saddle Billet

Location

Loc Qty

Loc Code

MAT046

41

144956

31

149294

10

6

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                              |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                              |  |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Step #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | <b>MRB (QS1042) Approval</b><br><br><div style="border: 1px solid black; height: 100px; width: 100%;"></div> |  |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |                                                                                                              |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | Completed By                                                                                                 |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | Lead hand / Supervisor Approval Verification                                                                 |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | QC / QA Coordinator Approval                                                                                 |  |  |
| <b>Root Cause</b><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">             Environment <input type="checkbox"/><br/>             Design <input type="checkbox"/><br/>             Doc/Data <input type="checkbox"/><br/>             Equip/Tooling <input type="checkbox"/><br/>             Handling/Pre <input type="checkbox"/><br/>             Material <input type="checkbox"/><br/>             Internal Transport <input type="checkbox"/><br/>             Tribal Knowledge <input type="checkbox"/><br/>             LOA <input type="checkbox"/><br/>             Substation <input type="checkbox"/><br/>             Past Expiry Date <input type="checkbox"/><br/>             Misidentified <input type="checkbox"/> </div> <div style="width: 50%;">             No Re-verification <input type="checkbox"/><br/>             Operator <input type="checkbox"/><br/>             Offset/Setup <input type="checkbox"/><br/>             Supplier <input type="checkbox"/><br/>             Training <input type="checkbox"/><br/>             Use for Testing <input type="checkbox"/><br/>             Poor Information <input type="checkbox"/><br/>             Rushing <input type="checkbox"/><br/>             Product Improvement <input type="checkbox"/><br/>             Process Improvement <input type="checkbox"/><br/>             Manufacturing Process <input type="checkbox"/><br/>             Past Due <input type="checkbox"/> </div> </div> |  | <b>FAULT CATEGORY</b><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;">             Pressure/Forced <input type="checkbox"/><br/>             Bending <input type="checkbox"/><br/>             Centre Not Concentric <input type="checkbox"/><br/>             Cracks <input type="checkbox"/><br/>             Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>             Cuffs <input type="checkbox"/><br/>             Crushing <input type="checkbox"/><br/>             Heat Treat <input type="checkbox"/><br/>             Wave/Twist in Tube <input type="checkbox"/><br/>             Marks/Chatter <input type="checkbox"/> </div> <div style="width: 33%;">             Temperature/Cure <input type="checkbox"/><br/>             Set-up <input type="checkbox"/><br/>             BOM/Route <input type="checkbox"/><br/>             Broken/Damage/Defect <input type="checkbox"/><br/>             Inspection Incomplete/Unqualified <input type="checkbox"/><br/>             Contamination <input type="checkbox"/><br/>             Countersink <input type="checkbox"/><br/>             Cut Too Short <input type="checkbox"/><br/>             Instructions Incomplete/Unclear <input type="checkbox"/><br/>             Drill Holes <input type="checkbox"/> </div> <div style="width: 33%;">             Power Loss/Surge <input type="checkbox"/><br/>             Folio/Program <input type="checkbox"/><br/>             Grain <input type="checkbox"/><br/>             Weld <input type="checkbox"/><br/>             Wrong Stock Pulled <input type="checkbox"/><br/>             Out of Sequence <input type="checkbox"/><br/>             Off-set <input type="checkbox"/><br/>             Mislabeled <input type="checkbox"/><br/>             Fit/Function <input type="checkbox"/><br/>             Misaligned/off center <input type="checkbox"/> </div> <div style="width: 33%;">             Positioned Wrong <input type="checkbox"/><br/>             Outside Dimensions <input type="checkbox"/><br/>             Over/Under tolerance <input type="checkbox"/><br/>             Part Incorrect <input type="checkbox"/><br/>             Part Lost/Missing <input type="checkbox"/><br/>             Part Moved <input type="checkbox"/><br/>             Drawing <input type="checkbox"/><br/>             Finish <input type="checkbox"/><br/>             Misread <input type="checkbox"/><br/>             Turning Sequence <input type="checkbox"/> </div> </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                              |  |  |
| OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                              |  |  |



|                                         |               |                             |
|-----------------------------------------|---------------|-----------------------------|
| <b>DART AEROSPACE LTD</b>               |               | <b>Work Order:</b> 150158   |
| <b>Description:</b> Saddle, Inboard, LH |               | <b>Part Number:</b> D3884-1 |
| <b>Inspection Dwg:</b> D3884            | <b>Rev.</b> C | <b>Page 1 of 1</b>          |

Inspect dimensions highlighted on inspection sheet drawing and record below:

| Dim           | Min   | Max   | Go/No Go Gauge | Recorded Actual Dimensions |       |       |       | By | Date |
|---------------|-------|-------|----------------|----------------------------|-------|-------|-------|----|------|
|               |       |       |                | 1                          | 2     | 3     | 4     |    |      |
| A             | 2.870 | 2.880 |                | 2.875                      | 2.875 | 2.875 | 2.875 |    |      |
| B             | 1.433 | 1.443 |                | 1.438                      | 1.438 | 1.438 | 1.438 |    |      |
| C             | 0.638 | 0.658 | .515           | .649                       | .648  | .648  | .648  |    |      |
| D             | 3.895 | 3.905 |                | 3.900                      | 3.900 | 3.900 | 3.900 |    |      |
| E             | 0.257 | 0.262 |                | .258                       | .258  | .258  | .258  |    |      |
| F             | 0.605 | 0.625 | .486           | .615                       | .615  | .615  | .615  |    |      |
| G             | 1.120 | 1.130 |                | 1.125                      | 1.125 | 1.125 | 1.125 |    |      |
| H             | 2.245 | 2.255 |                | 2.500                      | 2.500 | 2.500 | 2.500 |    |      |
| I             | 2.000 | 2.020 |                | 2.000                      | 2.000 | 2.000 | 2.000 |    |      |
| J             | 0.140 | 0.175 |                | .153                       | .151  | .151  | .151  |    |      |
| K             | 1.265 | 1.285 |                | 1.265                      | 1.265 | 1.265 | 1.265 |    |      |
| L             | 0.115 | 0.135 |                | .126                       | .126  | .126  | .126  |    |      |
| M             | 0.240 | 0.260 |                | .250                       | .251  | .251  | .251  |    |      |
| N             | 0.110 | 0.140 |                | .135                       | .135  | .135  | .135  |    |      |
| O             | 0.240 | 0.260 |                | .253                       | .255  | .255  | .255  |    |      |
| P             | 2.826 | 2.886 |                | 2.854                      | 2.854 | 2.854 | 2.854 |    |      |
| Q             | 0.178 | 0.198 |                | .188                       | .188  | .188  | .188  |    |      |
| R             | 0.140 | 0.165 |                | .153                       | .152  | .153  | .152  |    |      |
| S             | 0.720 | 0.780 |                | .760                       | .760  | .760  | .760  |    |      |
| T             | 1.220 | 1.280 |                | 1.250                      | 1.250 | 1.250 | 1.250 |    |      |
| U             | 1.245 | 1.255 |                | 1.250                      | 1.250 | 1.250 | 1.250 |    |      |
| V             | 5.990 | 6.010 |                | 6.000                      | 6.000 | 6.000 | 6.000 |    |      |
| W             | 2.495 | 2.505 |                | 2.500                      | 2.500 | 2.500 | 2.500 |    |      |
| X             | 0.490 | 0.510 |                | .498                       | .500  | .500  | .500  |    |      |
| Y             | 0.020 | 0.040 |                | .030                       | .030  | .030  | .030  |    |      |
| Z             | 0.313 | 0.318 |                | .314                       | .314  | .314  | .314  |    |      |
| AA            | 0.760 | 0.765 |                | .761                       | .761  | .761  | .761  |    |      |
| AB            | 0.215 | 0.220 |                | .219                       | .218  | .219  | .219  |    |      |
| AC            | 0.316 | 0.321 |                | .316                       | .316  | .316  | .316  |    |      |
| AD            | 1.745 | 1.755 |                | 1.750                      | 1.750 | 1.750 | 1.750 |    |      |
| AE            | 0.990 | 1.010 |                | 1.000                      | 1.000 | 1.000 | 1.000 |    |      |
| AF            |       |       |                |                            |       |       |       |    |      |
| Accept/Reject |       |       |                | ✓                          | ✓     | ✓     | ✓     |    |      |

|              |          |
|--------------|----------|
| Measured by: | FK       |
| Date:        | 16-09-01 |

|             |          |            |
|-------------|----------|------------|
| Audited by: | D.A.     | DAS        |
| Date:       | 16/09/06 | 08<br>9-89 |

| Rev | Date     | Change          | Revised by | Approved |
|-----|----------|-----------------|------------|----------|
| A   | 09.10.22 | New Issue       | KJ         |          |
| B   | 15.09.09 | Dwg Rev updated | KJ         |          |



|                                         |               |                     |         |
|-----------------------------------------|---------------|---------------------|---------|
| <b>DART AEROSPACE LTD</b>               |               | <b>Work Order:</b>  | 150158  |
| <b>Description:</b> Saddle, Inboard, LH |               | <b>Part Number:</b> | D3884-1 |
| <b>Inspection Dwg:</b> D3884            | <b>Rev.</b> C | <b>Page 1 of 1</b>  |         |

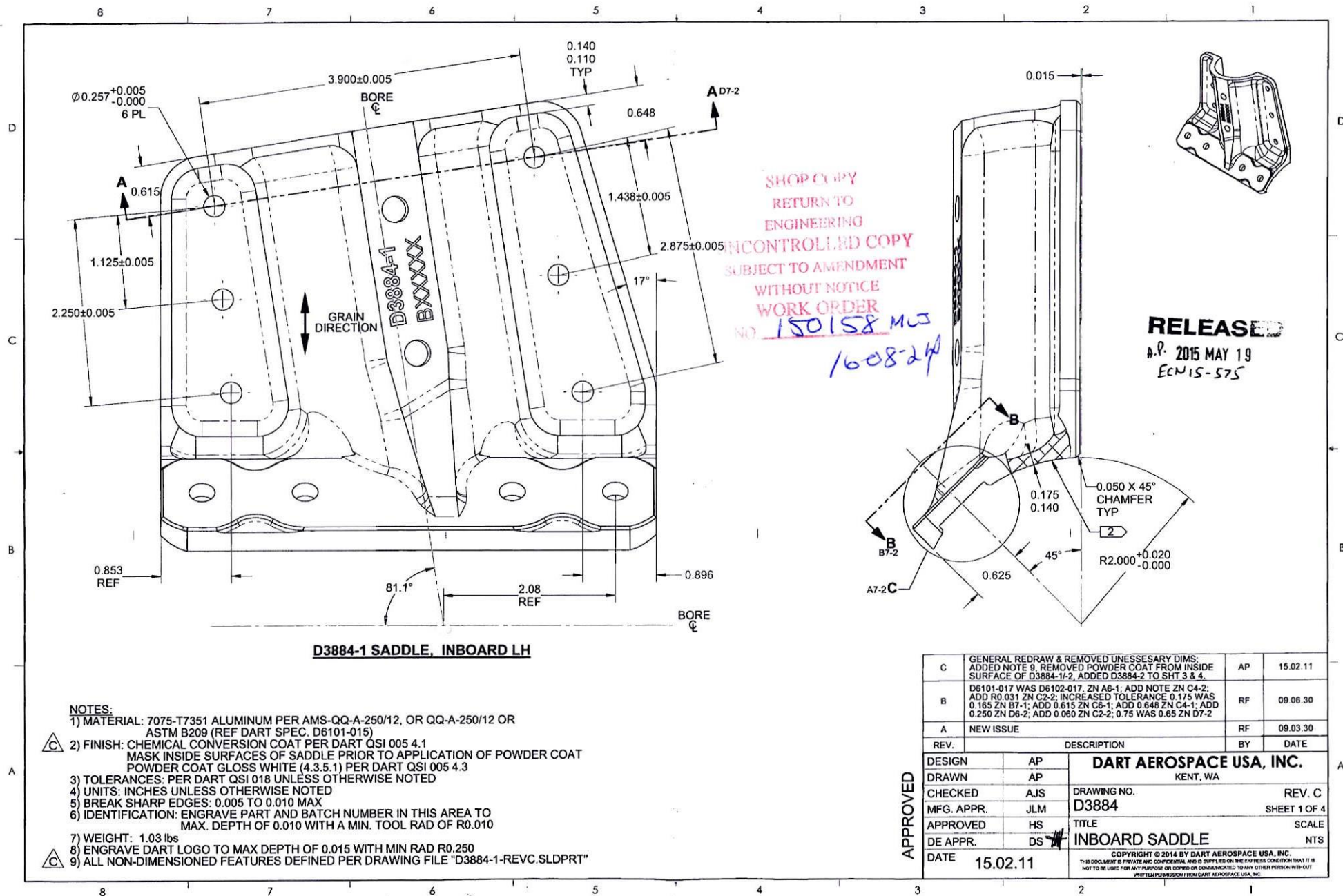
Inspect dimensions highlighted on inspection sheet drawing and record below:

|               |       |       |                | Recorded Actual Dimensions |       |   |   |    |      |
|---------------|-------|-------|----------------|----------------------------|-------|---|---|----|------|
| Dim           | Min   | Max   | Go/No Go Gauge | 5                          | 6     | 3 | 4 | By | Date |
| A             | 2.870 | 2.880 |                | 2.875                      | 2.875 |   |   |    |      |
| B             | 1.433 | 1.443 |                | 1.438                      | 1.438 |   |   |    |      |
| C             | 0.638 | 0.658 |                | .648                       | .648  |   |   |    |      |
| D             | 3.895 | 3.905 |                | 3.900                      | 3.900 |   |   |    |      |
| E             | 0.257 | 0.262 |                | .258                       | .258  |   |   |    |      |
| F             | 0.605 | 0.625 |                | .615                       | .615  |   |   |    |      |
| G             | 1.120 | 1.130 |                | 1.125                      | 1.125 |   |   |    |      |
| H             | 2.245 | 2.255 |                | 2.250                      | 2.250 |   |   |    |      |
| I             | 2.000 | 2.020 |                | 2.000                      | 2.000 |   |   |    |      |
| J             | 0.140 | 0.175 |                | .150                       | .152  |   |   |    |      |
| K             | 1.265 | 1.285 |                | 1.265                      | 1.265 |   |   |    |      |
| L             | 0.115 | 0.135 |                | .126                       | .126  |   |   |    |      |
| M             | 0.240 | 0.260 |                | .251                       | .251  |   |   |    |      |
| N             | 0.110 | 0.140 |                | .135                       | .135  |   |   |    |      |
| O             | 0.240 | 0.260 |                | .255                       | .255  |   |   |    |      |
| P             | 2.826 | 2.886 |                | 2.854                      | 2.854 |   |   |    |      |
| Q             | 0.178 | 0.198 |                | .188                       | .188  |   |   |    |      |
| R             | 0.140 | 0.165 |                | .152                       | .152  |   |   |    |      |
| S             | 0.720 | 0.780 |                | .760                       | .760  |   |   |    |      |
| T             | 1.220 | 1.280 |                | 1.250                      | 1.250 |   |   |    |      |
| U             | 1.245 | 1.255 |                | 1.250                      | 1.250 |   |   |    |      |
| V             | 5.990 | 6.010 |                | 6.000                      | 6.000 |   |   |    |      |
| W             | 2.495 | 2.505 |                | 2.500                      | 2.500 |   |   |    |      |
| X             | 0.490 | 0.510 |                | .500                       | .500  |   |   |    |      |
| Y             | 0.020 | 0.040 |                | .030                       | .030  |   |   |    |      |
| Z             | 0.313 | 0.318 |                | .314                       | .314  |   |   |    |      |
| AA            | 0.760 | 0.765 |                | .761                       | .761  |   |   |    |      |
| AB            | 0.215 | 0.220 |                | .219                       | .219  |   |   |    |      |
| AC            | 0.316 | 0.321 |                | .316                       | .316  |   |   |    |      |
| AD            | 1.745 | 1.755 |                | 1.750                      | 1.750 |   |   |    |      |
| AE            | 0.990 | 1.010 |                | 1.000                      | 1.000 |   |   |    |      |
| AF            |       |       |                |                            |       |   |   |    |      |
| Accept/Reject |       |       |                |                            |       |   |   |    |      |

|              |          |
|--------------|----------|
| Measured by: | FK       |
| Date:        | 16-09-02 |

|             |          |      |
|-------------|----------|------|
| Audited by: | H. a     | DAS  |
| Date:       | 16/09/06 | GB   |
|             |          | 9-85 |

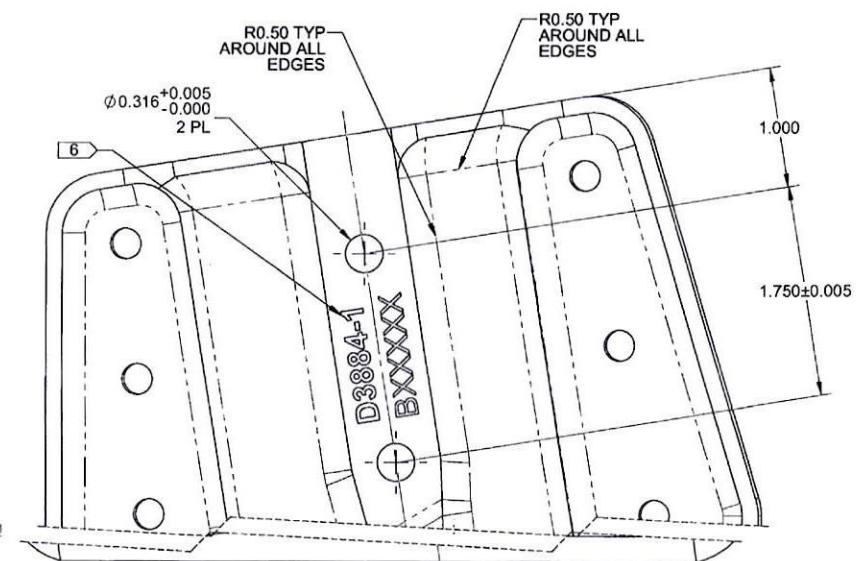
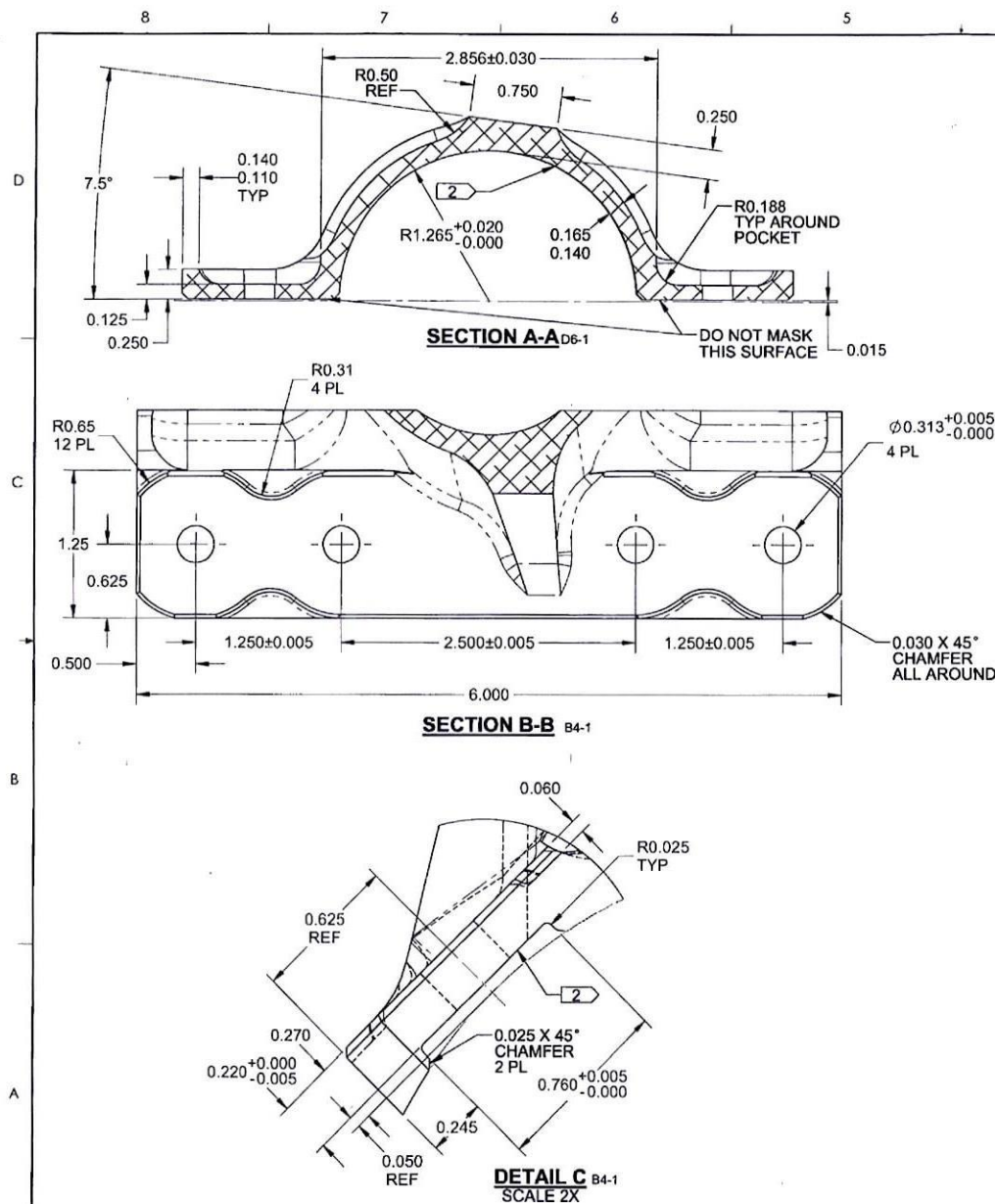
| Rev | Date     | Change          | Revised by | Approved |
|-----|----------|-----------------|------------|----------|
| A   | 09.10.22 | New Issue       | KJ         |          |
| B   | 15.09.09 | Dwg Rev updated | KJ         |          |



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1608-24

| C          | GENERAL REDRAW & REMOVED UNNECESSARY DIMS; ADDED NOTE 9, REMOVED POWDER COAT FROM INSIDE SURFACE OF D3884-1/2, ADDED D3884-2 TO SHT 3 & 4.                                                                             | AP                                                                                                                                                                                                                                                                                                  | 15.02.11     |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| B          | D6101-017 WAS D6102-017, ZN A6-1; ADD NOTE ZN C4-2; ADD R0.031 ZN C2-2; INCREASED TOLERANCE 0.175 WAS 0.185 ZN B7-1; ADD 0.615 ZN C6-1; ADD 0.648 ZN C4-1; ADD 0.250 ZN D6-2; ADD 0.060 ZN C2-2; 0.75 WAS 0.65 ZN D7-2 | RF                                                                                                                                                                                                                                                                                                  | 09.06.30     |
| A          | NEW ISSUE                                                                                                                                                                                                              | RF                                                                                                                                                                                                                                                                                                  | 09.03.30     |
| REV.       | DESCRIPTION                                                                                                                                                                                                            | BY                                                                                                                                                                                                                                                                                                  | DATE         |
| DESIGN     | AP                                                                                                                                                                                                                     | <b>DART AEROSPACE USA, INC.</b><br>KENT, WA                                                                                                                                                                                                                                                         |              |
| DRAWN      | AP                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                     |              |
| CHECKED    | AJS                                                                                                                                                                                                                    | DRAWING NO.                                                                                                                                                                                                                                                                                         | REV. C       |
| MFG. APPR. | JLM                                                                                                                                                                                                                    | <b>D3884</b>                                                                                                                                                                                                                                                                                        | SHEET 1 OF 4 |
| APPROVED   | HS                                                                                                                                                                                                                     | TITLE                                                                                                                                                                                                                                                                                               | SCALE        |
| DE APPR.   | DS                                                                                                                                                                                                                     | <b>INBOARD SADDLE</b>                                                                                                                                                                                                                                                                               | NTS          |
| DATE       | 15.02.11                                                                                                                                                                                                               | <small>COPYRIGHT © 2014 BY DART AEROSPACE USA, INC.<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small> |              |





**D3884-1 SADDLE, INBOARD LH**  
(AUXILIARY VIEW)

**RELEASED**  
A.P. 2015 MAY 19

APPROVED

|            |          |                                                                                                                                                                                                                                                                                                              |              |
|------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | AP       | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                                                                              |              |
| DRAWN      | AP       | KENT, WA                                                                                                                                                                                                                                                                                                     |              |
| CHECKED    | AJS      | DRAWING NO.                                                                                                                                                                                                                                                                                                  | REV. C       |
| MFG. APPR. | JLM      | D3884                                                                                                                                                                                                                                                                                                        | SHEET 2 OF 4 |
| APPROVED   | HS       | TITLE                                                                                                                                                                                                                                                                                                        | SCALE        |
| DE APPR.   | DS       | INBOARD SADDLE                                                                                                                                                                                                                                                                                               | NTS          |
| DATE       | 15.02.11 | <small>COPYRIGHT © 2014 BY DART AEROSPACE USA, INC.<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br/>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br/>WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small> |              |